UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,505	01/28/2004	Jozef Brcka	TAZ-246	3486

37694 7590 07/06/2006

WOOD, HERRON & EVANS, LLP (TOKYO ELECTRON)
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER	
ARANCIBIA, MAUREEN GRAMAGLIA	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,505	BRCKA, JOZEF	
	Examiner	Art Unit	
	Maureen G. Arancibia	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-13 and 21-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-13 and 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/17/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 24 April 2006 is acknowledged.

2. The Examiner notes the cancellation of the non-elected claims in the reply filed on 24 April 2006.

Information Disclosure Statement

3. The Examiner notes Applicant's statement that an information disclosure statement filed 19 July 2005 was not filed by Applicant and was entered in the instant application in error. The documents in question have been removed from the file history of the instant application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-13, 21, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,304,279 to Coultas et al. (from Applicant's IDS).

In regards to Claims 1, 12, and 13, Keller et al. teaches an ICP apparatus (Figure 1), comprising a vacuum processing chamber 10 having a dielectric window 17; and an inductive electrical-circuit element 22 being outside the dielectric window and generally congruent to the dielectric window and having a width and longitudinal extent generally

parallel to the dielectric window and having a thickness generally perpendicular to the dielectric window (Figure 1), wherein the inductive electrical-circuit element 22 comprises a conductor formed of a sheet of electrically conductive material (*planar radio frequency induction coil*; Column 4, Lines 48-51) having a pair of ends and formed into at least one loop having shaped edges defining a plurality of segments, including segments from each of a plurality of differing width and cross-sectional geometries, as broadly recited in the claim. (Figure 4) The shaped edges of the conductor are configured to define alternating segments of the differing geometries around an axis of the element (narrower concentric rings, flared portions, and wider concentric rings; Figure 4). The inductive electrical circuit element has a pair of RF connector terminals 28, 47, one fixed to each of the ends of the electrically conductive material. (Figure 4) An RF power source 30 is connected across the terminals at the end of the conductor, as broadly recited in the claim. (Source 30 is connected to terminal 47, while terminal 28 is connected to ground; Column 4, Lines 51-59)

In regards to Claims 3-6 and 9, the inductive electrical-circuit element 22 taught by Coultas et al. meets the geometrical limitations recited in the claims, including that the inductive element comprises segments of varying geometry and varying aspect ratio (narrowly angled vs. broadly angled or curved segments; narrower vs. wider segments), as well as cutouts and corresponding gaps. (Figure 9)

In regards to Claim 7, the conductor is an annular sheet split along a radius thereof interrupting its circumference and defining said ends of the conductor connectable across an RF source, as broadly recited in the claim. (Figure 4)

In regards to Claims 8 and 21, Coultas et al. teaches that the inductive element has a generally planar shape. (Figure 4; Column 4, Lines 48-49)

In regards to Claims 10 and 11, Coultas et al. teaches that the cutouts (empty spaces), which define the segments that form the current carrying path, are spaced around concentric circles at approximately equally circumferentially spaced intervals (i.e. approximately every half-circumference). (Figure 4)

In regards to Claim 25, the inductive electrical-circuit element 22 taught by Coultas et al., as discussed above, comprises a conductor formed of a sheet of electrically conductive material in the shape of several concentric loops having opposite edges encircling a central axis, the sheet having: a gap extending between the opposite edges in a spiral fashion and thereby defining a pair of terminal ends; a pair of RF connectors 28, 47, one fixed to each of the terminal ends; and a plurality of cutouts alternately spaced in the opposite edges (in a spiral fashion) defining a serpentine conductive path between the terminal ends that is formed of a series of segments of alternating high and low cross-sections and widths, as broadly recited in the claim. (Figure 4)

In regards to Claims 26 and 27, see the discussion of Claims 12 and 13 above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coultas et al. in view of U.S. Patent 6,459,066 to Khater et al. (previously of record).

The teachings of Coultas et al. were discussed above.

In regards to Claims 22-24, Coultas et al. does not expressly teach that the inductive electrical-circuit element has a shape that lies generally on the surface of a cylinder, sphere, or cone.

Khater et al. teaches that despite slight differences in each configuration due to the change in symmetry for each coordinate system, the principles of a planar inductive element can be extended to cylindrical, spherical, and conical geometries. (Column 7, Lines 9-26)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Coultas et al. to have the inductive electrical-circuit element have a shape that lies generally on the surface of a cylinder, sphere, or cone, rather than on a plane, as art-recognized equivalent means of generating the inductive field. (Khater et al.; Column 7, Lines 9-26) It has been held that substitution of equivalents requires no express motivation. *In re Fount*, 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152, USPQ (CCPA 1967).

Response to Arguments

8. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maureen G. Arancibia
Patent Examiner
Art Unit 1763

Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763